Format No: CP/TF/01

## TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

| | | |
|---|---|---|
| **Lab ID** | : | **CP-201910-18-29** **Date: 30-08-2019** |
| **Customer** | : | Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore. |
| **Address** | : | Byatarayanapura Sub Division, BBMP, Bangalore. |
| **Project Name** | : | Improvements to Road and Drains at Srirampura Cross Road in Ward No.05 Byatarayanapura Sub Division. |
| **Agency** | : | Sri.S.K. Keshavamurthy, #104, Sampigehalli, Jakkur Post, Bangalore-560 064. |
| **Customer's Reference** | : | BBMP/EE/BTP/WO/179/2018-19 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 27-08-2019 |
| **Sample Type** | : | Birla Super 53grade |
| **Reference to BIS codes** | : | IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,<br>IS 4031 (Part 1,2 3,4,5, 6,11):1988<br>IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4<br>IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5<br>IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6<br>IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5<br>IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5<br>IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6 |
| **Date of test** | : | 28-08-2019 |
| **Environmental Conditions during test** | : | Temperature: 26°C<br>Humidity: 72% |

| Sl.No. | Physical properties | Results | Requirement as per IS 12269: 2013 |
|---|---|---|---|
| 1 | Fineness by dry sieving (%) | 1.64 | – |
| 2 | Finess by Air permeablity method ($m^2$/kg,Min) | 296.2 | 225$m^2$/kg, Min |
| 3 | Density (gm/cc) | 3.12 | – |
| 4 | Standard Consistency (%) | 29.0% | Not specified |
| 5 | Initial Setting time | 146 minutes | Not less than 30 minutes |
| 6 | Final Setting time | 292 minutes | Not more than 600 minutes |
| 7 | Soundness (Le Chatelier's Method) | 2.5mm | Not more than 10 mm |

**Note:**

The results pertain to the samples received and tested.

All information furnished by Customer/Representative

Any correction in the report will make this report invalid

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**R RUDRAPRASAD**
Authorized Signatory
**Technical Manager**

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## TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

| | | | |
|---|---|---|---|
| **Lab ID** | : | **CP-201910-18-29** | **Date: 25-09-2019** |
| **Customer** | : | Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore. | |
| **Address** | : | Byatarayanapura Sub Division, BBMP, Bangalore. | |
| **Project Name** | : | Improvements to Road and Drains at Srirampura Cross Road in Ward No.05 Byatarayanapura Sub Division. | |
| **Agency** | : | Sri.S.K. Keshavamurthy, #104, Sampigehalli, Jakkur Post, Bangalore-560 064. | |
| **Customer's Reference** | : | BBMP/EE/BTP/WO/179/2018-19 | |
| **Source of Sample** | : | Sample supplied by Agency | |
| **Sample Condition** | : | Satisfactory | |
| **Date of Receipt** | : | 27-08-2019 | |
| **Sample Type** | : | Birla Super 53grade | |
| **Reference to BIS codes** | : | IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,<br>IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5<br>IS 4031 Part 6, Determination of Compressive Strength, Clause 6 | |
| **Date of test** | : | 28-08-2019 | |
| **Environmental Conditions during test** | : | Temperature:<br>Humidity: | 26˚C<br>72% |

**Compressive Strength**

| Sl.No. | Physical properties | Results | Requirement as per IS 12269: 2013 |
|---|---|---|---|
| 1 | 3 Days | 28.5N/mm$^2$ | Not less than 27 N/mm$^2$ |
| 2 | 7 Days | 39.0N/mm$^2$ | Not less than 37 N/mm$^2$ |
| 3 | 28 Days | 58.5N/mm$^2$ | Not less than 53 N/mm$^2$ |

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**R RUDRAPRASAD**
Authorized Signatory
**Technical Manager**


****End of Report****

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## TEST REPORT ON COARSE AGGREGATES

| | | |
|---|---|---|
| **Lab ID** | : | **CP-201910-18-29** **Date: 30-08-2019** |
| **Customer** | : | Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore. |
| **Address** | : | Byatarayanapura Sub Division, BBMP, Bangalore. |
| **Project Name** | : | Improvements to Road and Drains at Srirampura Cross Road in Ward No.05 Byatarayanapura Sub Division. |
| **Agency** | : | Sri.S.K. Keshavamurthy, #104, Sampigehalli, Jakkur Post, Bangalore-560 064. |
| **Customer's Reference** | : | BBMP/EE/BTP/WO/179/2018-19 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample condition** | : | Satisfactory |
| **Date of Receipt** | : | 27-08-2019 |
| **Sample Type** | : | 40mm down size coarse aggregate |
| **Reference to BIS codes** | : | IS: 383:2016 (Specification for Coarse and fine Aggregates )<br>IS: 2386 :1963(Part - 1,3,4) RA2011<br>IS 2386 Part 1: Particle Size and Shape<br>IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption<br>IS 2386 Part 4: Mechanical Properties |
| **Date of test** | : | 27-08-2019 |

**SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:**

**Total weight taken : 15000 grams**

| Sample No. | Sieve No. | Weight Retained in gms | Cumulative Weight Retained in gms | % Cumulative Weight Retained | % Passing | Required as per IS 383:2016 |
|---|---|---|---|---|---|---|
| 1 | 80 mm | 0 | 0 | 0.0 | 100 | 100 |
| 2 | 40 mm | 429 | 429 | 2.9 | 97.1 | 90-100 |
| 3 | 20 mm | 7195 | 7624 | 50.8 | 49.2 | 30-70 |
| 4 | 10 mm | 3859 | 11483 | 76.6 | 23.4 | 10-35 |
| 5 | 4.75 mm | 2953 | 14436 | 96.2 | 3.8 | 0-5 |
| 6 | Pan | 564 | 15000 | 100.0 | 0 | --- |



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## TEST REPORT ON COARSE AGGREGATES

**Lab ID** : **CP-201910-18-29** **Date: 30-08-2019**

**PHYSICAL PROPERTIES**

| Sl.no | Tests | Result | Requirements as per IS:383-2016 |
|---|---|---|---|
| 1 | Flakiness Index(%) | 11.2 | Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate |
| 2 | Elongation Index(%) | 10.7 | |
| 3 | Specific Gravity | 2.45 | – |
| 4 | Bulk Density(Loose) (Kg/l) | 1.47 | – |
| 5 | Bulk Density(Compacted) (Kg/l) | 1.52 | – |
| 6 | Water Absorption(%) | 0.19 | – |

**Note:**
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**R RUDRAPRASAD**
Authorized Signatory
**Technical Manager**


****End of Report****

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## TEST REPORT ON COARSE AGGREGATES

| | | |
|---|---|---|
| **Lab ID** | : | **CP-201910-18-29** **Date: 29-08-2019** |
| **Customer** | : | Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore. |
| **Address** | : | Byatarayanapura Sub Division, BBMP, Bangalore. |
| **Project Name** | : | Improvements to Road and Drains at Srirampura Cross Road in Ward No.05 Byatarayanapura Sub Division. |
| **Agency** | : | Sri.S.K. Keshavamurthy, #104, Sampigehalli, Jakkur Post, Bangalore-560 064. |
| **Customer Reference** | : | BBMP/EE/BTP/WO/179/2018-19 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 27-08-2019 |
| **Sample Type/ Size** | : | 20mm down size coarse aggregate |
| **Reference to BIS codes** | : | IS: 383:2016 (Specification for Coarse and fine Aggregates )<br>IS: 2386 :1963(Part - 1,3,4) RA2011<br>IS 2386 Part 1: Particle Size and Shape<br>IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption<br>IS 2386 Part 4: Mechanical Properties |
| **Date of test** | : | 27-08-2019 |

**SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:**

**Total weight taken : 5000 grams**

| Sample No. | Sieve No. | Weight Retained in gms | Cumulative Weight Retained in gms | % Cumulative Weight Retained | % Passing | Required as per IS 383:2016 |
|---|---|---|---|---|---|---|
| 1 | 40 mm | 0 | 0 | 0 | 100 | 100 |
| 2 | 20 mm | 155 | 155 | 3.1 | 96.9 | 90-100 |
| 3 | 10 mm | 3344 | 3499 | 70.0 | 30.0 | 25-55 |
| 4 | 4.75 mm | 1377 | 4876 | 97.5 | 2.5 | 0-10 |
| 5 | Pan | 124 | 5000 | 100 | 0 | – |



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## TEST REPORT ON COARSE AGGREGATES

**Lab ID** : **CP-201910-18-29** **Date: 29-08-2019**

### PHYSICAL PROPERTIES

| Sl.no | Tests | Result | Requirements as per IS:383-2016 |
|---|---|---|---|
| 1 | Flakiness Index(%) | 11.6 | Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate |
| 2 | Elongation Index(%) | 12.5 | |
| 3 | Specific Gravity | 2.62 | _ |
| 4 | Bulk Density(Loose) (Kg/l) | 1.47 | _ |
| 5 | Bulk Density(Compacted) (Kg/l) | 1.54 | _ |
| 6 | Water Absorption(%) | 0.23 | _ |
| 7 | Aggregate crushing Value(%) | 23.7 | Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface. |
| 8 | Aggregate Impact Value(%) | 22.7 | 30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface. |

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**R RUDRAPRASAD**
Authorized Signatory
**Technical Manager**


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# TEST REPORT OF FINE AGGREGATE

**Lab ID** : **CP-201910-18-29** **Date: 29-08-2019**

**Customer** : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.

**Address** : Byatarayanapura Sub Division, BBMP, Bangalore.

**Project Name** : Improvements to Road and Drains at Srirampura Cross Road in Ward No.05 Byatarayanapura Sub Division.

**Agency** : Sri.S.K. Keshavamurthy, #104, Sampigehalli, Jakkur Post, Bangalore-560 064.

**Customer's Reference** : BBMP/EE/BTP/WO/179/2018-19

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 27-08-2019

**Sample Type** : Fine Aggregate

**Reference to BIS codes** : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1, 3) RA2012
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption

**Date of test** : 27-08-2019

**Total weight taken** : 1000 grams

| Sl.no | Sieve Size | Weight Retained (gms) | Cumulative Weight Retained (gms) | % Cumulative Weight Retained | % Passing | Requirement as per IS 383:2016 | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Grading Zone I | Grading Zone II | Grading Zone III | Grading Zone IV |
| 1 | 10 mm | 0 | 0 | 0.0 | 100.0 | 100 | 100 | 100 | 100 |
| 2 | 4.75 mm | 27 | 27 | 2.7 | 97.3 | 90-100 | 90-100 | 90-100 | 95-100 |
| 3 | 2.36 mm | 55 | 82 | 8.2 | 91.8 | 60-95 | 75-100 | 85-100 | 95-100 |
| 4 | 1.18 mm | 239 | 321 | 32.1 | 67.9 | 30-70 | 55-90 | 75-100 | 90-100 |
| 5 | 600 micron | 205 | 526 | 52.6 | 47.4 | 15-34 | 35-59 | 60-79 | 80-100 |
| 6 | 300 micron | 203 | 729 | 72.9 | 27.1 | 5-20 | 8-30 | 12-40 | 15-50 |
| 7 | 150 micron | 191 | 920 | 92.0 | 8.0 | 0-10 | 0-10 | 0-10 | 0-15 |
| 8 | Pan | 80 | 1000 | 100.0 | 0.0 | --- | --- | --- | --- |
| **Result :The tested Sample Conforms to Grading Zone II** | | | | | | | | | |



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# TEST REPORT OF FINE AGGREGATE

**Lab ID** : **CP-201910-18-29** **Date: 29-08-2019**

**PHYSICAL PROPERTIES**

| Sl.no | Tests | Result | Requirements as per IS 383:2016 |
|---|---|---|---|
| 1 | Water Absorption(%) | 1.5 | _ |
| 2 | Specific Gravity | 2.59 | _ |
| 3 | Material finer than 75 micron(%) | 6.9 | Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10% |

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**R RUDRAPRASAD**
Authorized Signatory
**Technical Manager**


****End of Report****

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Format No: CP/TF/01

# TEST REPORT OF CEMENT CONCRETE CUBES

**Lab ID** : **CP-201910-18-29** **Date: 07/09/2019**

**Customer** : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.

**Address** : Byatarayanapura Sub Division, BBMP, Bangalore.

**Project Name** : Improvements to Road and Drains at Srirampura Cross Road in Ward No.05 Byatarayanapura Sub Division.

**Agency** : Sri.S.K. Keshavamurthy, #104, Sampigehalli, Jakkur Post, Bangalore-560 064.

**Customer's Reference** : BBMP/EE/BTP/WO/179/2018-19

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 03-09-2019

**Customer ID** : RMC

**Sample Type /Size** : 150X150X150 mm

**Sample grade/Age** : M20 / 7 Days Compressive Strength

**Reference to BIS codes** : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

**Date of test** : 07/09/2019

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RMC | M20 | 31/08/2019 | 07/09/2019 | 149.89 X 149.27 X 151.74 | 22374 | **8.934** | 417.5 | 18.7 | 18.7 |
| 2 | RMC | M20 | 31/08/2019 | 07/09/2019 | 151.25 X 151.88 X 149.78 | 22971 | **8.849** | 426.7 | 18.6 | |
| 3 | RMC | M20 | 31/08/2019 | 07/09/2019 | 149.36 X 149.61 X 149.60 | 22346 | **8.095** | 419.9 | 18.8 | |

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**Technical Manager**

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Format No: CP/TF/01

# TEST REPORT OF CEMENT CONCRETE CUBES

**Lab ID** : **CP-201910-18-29** **Date: 28/09/2019**

**Customer** : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.

**Address** : Byatarayanapura Sub Division, BBMP, Bangalore.

**Project Name** : Improvements to Road and Drains at Srirampura Cross Road in Ward No.05 Byatarayanapura Sub Division.

**Agency** : Sri.S.K. Keshavamurthy, #104, Sampigehalli, Jakkur Post, Bangalore-560 064.

**Customer's Reference** : BBMP/EE/BTP/WO/179/2018-19

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 03-09-2019

**Customer ID** : RMC

**Sample Type /Size** : 150X150X150 mm

**Sample grade/Age** : M20 / 28 Days Compressive Strength

**Reference to BIS codes** : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

**Date of test** : 28/09/2019

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RMC | M20 | 31/08/2019 | 28/09/2019 | 149.81 X 150.83 X 151.29 | 22596 | **8.756** | 528.3 | 23.4 | 23.4 |
| 2 | RMC | M20 | 31/08/2019 | 28/09/2019 | 149.37 X 149.36 X 149.83 | 22310 | **8.879** | 510.0 | 22.9 | |
| 3 | RMC | M20 | 31/08/2019 | 28/09/2019 | 149.08 X 151.73 X 151.14 | 22620 | **8.655** | 541.4 | 23.9 | |

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**Technical Manager**

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# TEST REPORT OF CEMENT CONCRETE CUBES

| | | |
|---|---|---|
| **Lab ID** | : | **CP-201910-18-29** **Date: 07/09/2019** |
| **Customer** | : | Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore. |
| **Address** | : | Byatarayanapura Sub Division, BBMP, Bangalore. |
| **Project Name** | : | Improvements to Road and Drains at Srirampura Cross Road in Ward No.05 Byatarayanapura Sub Division. |
| **Agency** | : | Sri.S.K. Keshavamurthy, #104, Sampigehalli, Jakkur Post, Bangalore-560 064. |
| **Customer's Reference** | : | BBMP/EE/BTP/WO/179/2018-19 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 03-09-2019 |
| **Customer ID** | : | RMC |
| **Sample Type /Size** | : | 150X150X150 mm |
| **Sample grade/Age** | : | M20 / 7 Days Compressive Strength |
| **Reference to BIS codes** | : | IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5 |
| **Date of test** | : | 07/09/2019 |

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RMC | M20 | 31/08/2019 | 07/09/2019 | 151.63 X 150.48 X 149.93 | 22818 | **8.934** | 427.7 | 18.7 | 18.6 |
| 2 | RMC | M20 | 31/08/2019 | 07/09/2019 | 150.52 X 151.27 X 149.58 | 22770 | **8.849** | 424.3 | 18.6 | |
| 3 | RMC | M20 | 31/08/2019 | 07/09/2019 | 151.71 X 149.15 X 151.21 | 22627 | **8.095** | 417.3 | 18.4 | |

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**R RUDRAPRASAD**
Authorized Signatory
**Technical Manager**


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# TEST REPORT OF CEMENT CONCRETE CUBES

**Lab ID** : **CP-201910-18-29** **Date: 28/09/2019**

**Customer** : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.

**Address** : Byatarayanapura Sub Division, BBMP, Bangalore.

**Project Name** : Improvements to Road and Drains at Srirampura Cross Road in Ward No.05 Byatarayanapura Sub Division.

**Agency** : Sri.S.K. Keshavamurthy, #104, Sampigehalli, Jakkur Post, Bangalore-560 064.

**Customer's Reference** : BBMP/EE/BTP/WO/179/2018-19

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 03-09-2019

**Customer ID** : RMC

**Sample Type /Size** : 150X150X150 mm

**Sample grade/Age** : M20 / 28 Days Compressive Strength

**Reference to BIS codes** : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

**Date of test** : 28/09/2019

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RMC | M20 | 31/08/2019 | 28/09/2019 | 151.16 X 151.86 X 150.62 | 22955 | **8.756** | 535.3 | 23.3 | 22.9 |
| 2 | RMC | M20 | 31/08/2019 | 28/09/2019 | 151.71 X 149.25 X 150.01 | 22644 | **8.879** | 503.6 | 22.2 | |
| 3 | RMC | M20 | 31/08/2019 | 28/09/2019 | 150.25 X 149.41 X 149.74 | 22449 | **8.655** | 518.8 | 23.1 | |

**Note:**

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ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
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ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-24

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**R RUDRAPRASAD**
Authorized Signatory
**Technical Manager**


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HIGHWAY & BUILDING MATERIALS TESTING LABORATORY | STRUCTURAL | GEO TECHNICAL | PROJECT MANAGEMENT | SURVEYING SERVICES |

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# TEST REPORT OF CEMENT CONCRETE CUBES

| | | |
|---|---|---|
| **Lab ID** | : | **CP-201910-18-29** **Date: 07/09/2019** |
| **Customer** | : | Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore. |
| **Address** | : | Byatarayanapura Sub Division, BBMP, Bangalore. |
| **Project Name** | : | Improvements to Road and Drains at Srirampura Cross Road in Ward No.05 Byatarayanapura Sub Division. |
| **Agency** | : | Sri.S.K. Keshavamurthy, #104, Sampigehalli, Jakkur Post, Bangalore-560 064. |
| **Customer's Reference** | : | BBMP/EE/BTP/WO/179/2018-19 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 03-09-2019 |
| **Customer ID** | : | RMC |
| **Sample Type /Size** | : | 150X150X150 mm |
| **Sample grade/Age** | : | M20 / 7 Days Compressive Strength |
| **Reference to BIS codes** | : | IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5 |
| **Date of test** | : | 07/09/2019 |

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RMC | M20 | 31/08/2019 | 07/09/2019 | 149.43 X 150.51 X 149.02 | 22489 | **8.934** | 412.8 | 18.4 | 18.4 |
| 2 | RMC | M20 | 31/08/2019 | 07/09/2019 | 150.05 X 151.91 X 149.93 | 22793 | **8.849** | 420.4 | 18.4 | |
| 3 | RMC | M20 | 31/08/2019 | 07/09/2019 | 150.86 X 149.45 X 150.20 | 22546 | **8.095** | 413.4 | 18.3 | |

**Note:**
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ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-24

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**R RUDRAPRASAD**
Authorized Signatory
**Technical Manager**

Format No: CP/TF/01

# TEST REPORT OF CEMENT CONCRETE CUBES

**Lab ID** : **CP-201910-18-29** **Date: 28/09/2019**

**Customer** : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.

**Address** : Byatarayanapura Sub Division, BBMP, Bangalore.

**Project Name** : Improvements to Road and Drains at Srirampura Cross Road in Ward No.05 Byatarayanapura Sub Division.

**Agency** : Sri.S.K. Keshavamurthy, #104, Sampigehalli, Jakkur Post, Bangalore-560 064.

**Customer's Reference** : BBMP/EE/BTP/WO/179/2018-19

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 03-09-2019

**Customer ID** : RMC

**Sample Type /Size** : 150X150X150 mm

**Sample grade/Age** : M20 / 28 Days Compressive Strength

**Reference to BIS codes** : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

**Date of test** : 28/09/2019

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RMC | M20 | 31/08/2019 | 28/09/2019 | 151.94 X 149.33 X 150.05 | 22690 | **8.756** | 539.2 | 23.8 | 23.3 |
| 2 | RMC | M20 | 31/08/2019 | 28/09/2019 | 150.64 X 149.84 X 150.19 | 22572 | **8.879** | 504.7 | 22.4 | |
| 3 | RMC | M20 | 31/08/2019 | 28/09/2019 | 150.65 X 150.53 X 149.09 | 22677 | **8.655** | 537.1 | 23.7 | |

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**R RUDRAPRASAD**
Authorized Signatory
**Technical Manager**


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Format No: CP/TF/01

# TEST REPORT OF CEMENT CONCRETE CUBES

| | | |
|---|---|---|
| **Lab ID** | : | **CP-201910-18-29** **Date: 07/09/2019** |
| **Customer** | : | Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore. |
| **Address** | : | Byatarayanapura Sub Division, BBMP, Bangalore. |
| **Project Name** | : | Improvements to Road and Drains at Srirampura Cross Road in Ward No.05 Byatarayanapura Sub Division. |
| **Agency** | : | Sri.S.K. Keshavamurthy, #104, Sampigehalli, Jakkur Post, Bangalore-560 064. |
| **Customer's Reference** | : | BBMP/EE/BTP/WO/179/2018-19 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 03-09-2019 |
| **Customer ID** | : | RMC |
| **Sample Type /Size** | : | 150X150X150 mm |
| **Sample grade/Age** | : | M20 / 7 Days Compressive Strength |
| **Reference to BIS codes** | : | IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5 |
| **Date of test** | : | 07/09/2019 |

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RMC | M20 | 31/08/2019 | 07/09/2019 | 149.64 X 150.41 X 149.92 | 22506 | **8.934** | 425.4 | 18.9 | 18.9 |
| 2 | RMC | M20 | 31/08/2019 | 07/09/2019 | 150.83 X 150.90 X 149.42 | 22760 | **8.849** | 425.7 | 18.7 | |
| 3 | RMC | M20 | 31/08/2019 | 07/09/2019 | 149.96 X 151.77 X 149.81 | 22758 | **8.095** | 432.3 | 19.0 | |

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# TEST REPORT OF CEMENT CONCRETE CUBES

**Lab ID** : **CP-201910-18-29** **Date: 28/09/2019**

**Customer** : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.

**Address** : Byatarayanapura Sub Division, BBMP, Bangalore.

**Project Name** : Improvements to Road and Drains at Srirampura Cross Road in Ward No.05 Byatarayanapura Sub Division.

**Agency** : Sri.S.K. Keshavamurthy, #104, Sampigehalli, Jakkur Post, Bangalore-560 064.

**Customer's Reference** : BBMP/EE/BTP/WO/179/2018-19

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 03-09-2019

**Customer ID** : RMC

**Sample Type /Size** : 150X150X150 mm

**Sample grade/Age** : M20 / 28 Days Compressive Strength

**Reference to BIS codes** : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

**Date of test** : 28/09/2019

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RMC | M20 | 31/08/2019 | 28/09/2019 | 150.23 X<br>149.49 X<br>150.09 | 22458 | **8.756** | 518.2 | 23.1 | 23.0 |
| 2 | RMC | M20 | 31/08/2019 | 28/09/2019 | 149.64 X<br>149.81 X<br>149.80 | 22419 | **8.879** | 500.9 | 22.3 | |
| 3 | RMC | M20 | 31/08/2019 | 28/09/2019 | 149.81 X<br>151.81 X<br>149.15 | 22742 | **8.655** | 539.6 | 23.7 | |

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ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-28

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
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CIVIL Pro Sig. Date. BANGALORE

**FOR CIVIL Pro.**

**R RUDRAPRASAD**
Authorized Signatory
**Technical Manager**


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Format No: CP/TF/01

# TEST REPORT OF CEMENT CONCRETE CUBES

**Lab ID** : **CP-201910-18-29** **Date: 07/09/2019**

**Customer** : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.

**Address** : Byatarayanapura Sub Division, BBMP, Bangalore.

**Project Name** : Improvements to Road and Drains at Srirampura Cross Road in Ward No.05 Byatarayanapura Sub Division.

**Agency** : Sri.S.K. Keshavamurthy, #104, Sampigehalli, Jakkur Post, Bangalore-560 064.

**Customer's Reference** : BBMP/EE/BTP/WO/179/2018-19

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 03-09-2019

**Customer ID** : RMC

**Sample Type /Size** : 150X150X150 mm

**Sample grade/Age** : M20 / 7 Days Compressive Strength

**Reference to BIS codes** : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

**Date of test** : 07/09/2019

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RMC | M20 | 31/08/2019 | 07/09/2019 | 150.65 X 150.71 X 149.06 | 22704 | **8.934** | 424.2 | 18.7 | 18.6 |
| 2 | RMC | M20 | 31/08/2019 | 07/09/2019 | 149.30 X 151.89 X 150.72 | 22677 | **8.849** | 429.8 | 19.0 | |
| 3 | RMC | M20 | 31/08/2019 | 07/09/2019 | 151.94 X 151.61 X 151.54 | 23036 | **8.095** | 421.4 | 18.3 | |

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**R RUDRAPRASAD**
Authorized Signatory
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# TEST REPORT OF CEMENT CONCRETE CUBES

**Lab ID** : **CP-201910-18-29** **Date: 07/09/2019**

**Customer** : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.

**Address** : Byatarayanapura Sub Division, BBMP, Bangalore.

**Project Name** : Improvements to Road and Drains at Srirampura Cross Road in Ward No.05 Byatarayanapura Sub Division.

**Agency** : Sri.S.K. Keshavamurthy, #104, Sampigehalli, Jakkur Post, Bangalore-560 064.

**Customer's Reference** : BBMP/EE/BTP/WO/179/2018-19

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 03-09-2019

**Customer ID** : RMC

**Sample Type /Size** : 150X150X150 mm

**Sample grade/Age** : M20 / 7 Days Compressive Strength

**Reference to BIS codes** : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

**Date of test** : 07/09/2019

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RMC | M20 | 31/08/2019 | 07/09/2019 | 150.65 X 150.71 X 149.06 | 22704 | **8.934** | 424.2 | 18.7 | 18.6 |
| 2 | RMC | M20 | 31/08/2019 | 07/09/2019 | 149.30 X 151.89 X 150.72 | 22677 | **8.849** | 429.8 | 19.0 | |
| 3 | RMC | M20 | 31/08/2019 | 07/09/2019 | 151.94 X 151.61 X 151.54 | 23036 | **8.095** | 421.4 | 18.3 | |

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Authorized Signatory
**Technical Manager**


****End of Report****

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Format No: CP/TF/01

# TEST REPORT OF CEMENT CONCRETE CUBES

**Lab ID** : **CP-201910-18-29** **Date: 28/09/2019**

**Customer** : Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.

**Address** : Byatarayanapura Sub Division, BBMP, Bangalore.

**Project Name** : Improvements to Road and Drains at Srirampura Cross Road in Ward No.05 Byatarayanapura Sub Division.

**Agency** : Sri.S.K. Keshavamurthy, #104, Sampigehalli, Jakkur Post, Bangalore-560 064.

**Customer's Reference** : BBMP/EE/BTP/WO/179/2018-19

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 03-09-2019

**Customer ID** : RMC

**Sample Type /Size** : 150X150X150 mm

**Sample grade/Age** : M20 / 28 Days Compressive Strength

**Reference to BIS codes** : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

**Date of test** : 28/09/2019

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RMC | M20 | 31/08/2019 | 28/09/2019 | 150.10 X 149.36 X 150.20 | 22420 | **8.756** | 520.5 | 23.2 | 22.8 |
| 2 | RMC | M20 | 31/08/2019 | 28/09/2019 | 150.28 X 149.72 X 151.90 | 22500 | **8.879** | 499.2 | 22.2 | |
| 3 | RMC | M20 | 31/08/2019 | 28/09/2019 | 150.51 X 151.39 X 150.30 | 22785 | **8.655** | 524.4 | 23.0 | |

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